Econ 311: Behavioral and Experimental Economics

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Evidence for Prospect Theory

Prospect Theory in the Machina Triangle

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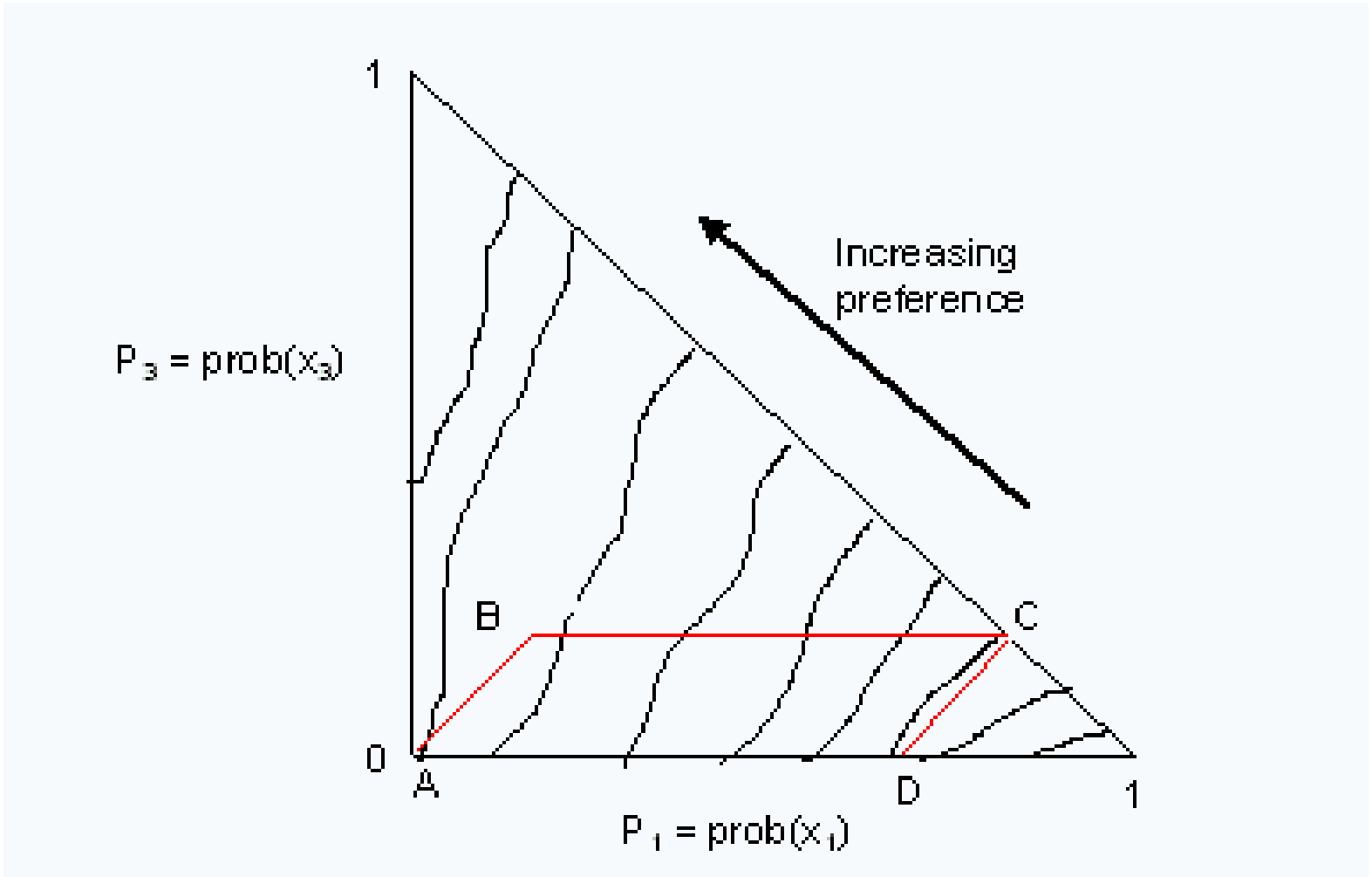
- Indifference curves must be *fanning out*

Machina Triangle: Fanning Out Indifference Curves



Evidence for Reference-Dependence and Loss Aversion

- We have already seen two key pieces of evidence for the reference dependence/loss aversion part of prospect theory
  - Lab evidence: Kahneman, Knetch, and Thaler (1990) mug experiment
    - We did this with notebooks
    - Prospect theory can explain behavior known as *endowment effect*
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- What about evidence for probability weighting?

Evidence for Probability Weighting

- Tversky and Kahneman (1992) recuited 25 graduation students
- Paid fixed amount for participation (unincentivized choices)
- Decision problem
  - Shown a two-state gamble of the form $(p, x : 1 - p, 0)$ for various x and p
  - Asked to state dollar amount c that would make them indifferent between c for sure and gamble, ie the certainty equivalent
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  - So plotting reported values of $\frac{c}{x}$ vs changing levels of p should return $\pi(p)$

Tversky and Kahneman (1992) Results

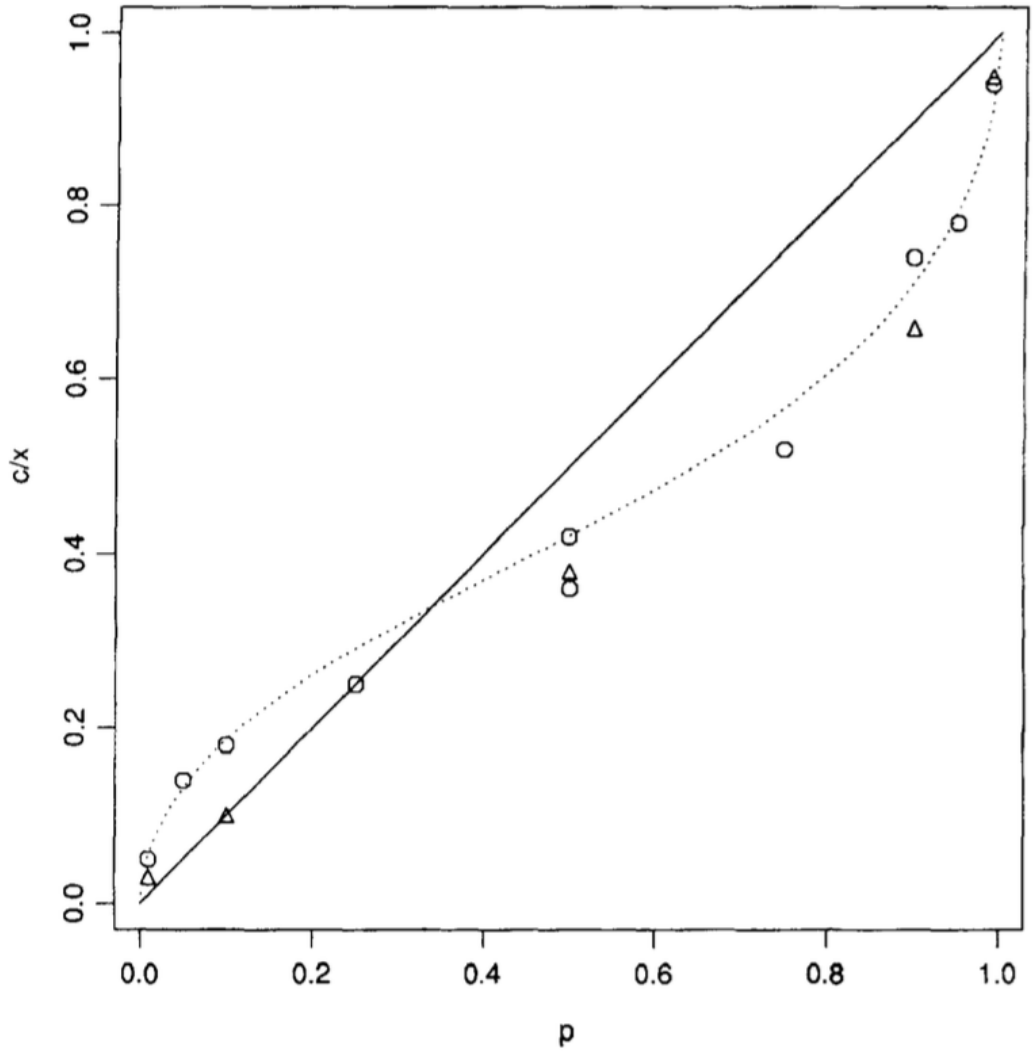

Figure 1. Median c/x for all positive prospects of the form $(x, p; 0, 1 - p)$. Triangles and circles, respectively, correspond to values of x that lie above or below 200.

Other Non-Expected Utility Theories

Expectations-Based Reference Dependence

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  - Expectations about future uncertain outcome
- Expectations offer a possible way to "close" the model
- Leads to another reference-dependent model (different from prospect theory): disappointment aversion

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- Finally, expected utility of whole gamble:

$$U = p\tilde{u}(C|C_p) + (1-p)\tilde{u}(Y|C_p)$$